



# ecology and environment, inc.

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International Specialists in the Environment

## MEMORANDUM

DATE: March 21, 1988

TO: John Osborn, FIT-RPO, USEPA, Region X

FOR: Joyce Crosson, RSCC, USEPA, Region X

THRU: *JK* Jeffrey Villnow, FIT-OM, E&E, Seattle *JK*

FROM: Lila Accra, Chemist, E&E, Seattle *La*  
Andrew Hafferty, Senior Chemist, E&E, Seattle *JK*

SUBJ: QA of Case 3591J (Bulk Asbestos)  
Spokane Junkyard

REF: F10-8802-07

CC: Raleigh Farlow, DPO-ESD, USEPA, Region X  
Gerald Muth, DPO, USEPA, Region X Laboratory, Manchester  
Chuck Elly, DPO, USEPA, Region V  
Glen Bruck, ESD-PO, USEPA, Region X  
Deborah Flood, HWD-SM, USEPA, Region X  
Joseph Hunt, E&E, Seattle

The Quality Assurance review of 61 samples, Case 3591J, collected from Spokane Junkyard, has been completed. Sixty-one soil samples were analyzed for bulk asbestos by Clayton Environmental Consultants of Novi, Michigan. The samples were numbered:

88074480	88074496	88074806	88074821
88074481	88074497	88074807	88074822
88074482	88074498	88074808	88074823
88074483	88074499	88074809	88074824
88074484	88074500	88074810	88074828
88074485	88074501	88074811	88074829
88074486	88074502	88074812	88074830
88074487	88074503	88074813	88074835
88074488	88074504	88074814	88074836
88074489	88074800	88074815	88074837
88074490	88074801	88074816	88074838
88074491	88074802	88074817	88074839
88074492	88074803	88074818	88074840
88074493	88074804	88074819	88074841
88074494	88074805	88074820	88074842
88074495			

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Superfund Branch

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### Data Qualifications

The following comments refer to the laboratory performance in meeting the Specifications outlined in the "Interim Method for the Determination of Asbestos in Bulk Insulation Samples."

#### 1) Timeliness

There are no holding time requirements for bulk asbestos analysis. The samples were collected on February 8 through February 12, 1988 and analyzed February 16 or 18, 1988.

#### 2) Sample Preparation

All samples were homogenized with a mortar and pestle. Two preparations of each sample were mounted in dispersion staining liquid with a refractive index of 1.550 under a stereoscopic microscope.

#### 3) Fiber Identification

Mounted samples were analyzed with an Olympus BH2 polarized light microscope, using a dispersion staining objective lens. Any fibers seen were checked for morphology, color and pleochroism, refractive index, birefringence, extinction characteristics, and sign of elongation.

#### 4) Quantitation of Asbestos Content

Asbestos-fibers were identified as having an aspect ratio greater than 3:1 and being positively identified as one of the minerals in Table 1-1 of the EPA Test Method.

The laboratory used a 25 point Chalkley Point Array for fiber quantitation. One hundred points were counted for each preparation, averaging the two counts. Four preparations were made for samples containing less than 5% asbestos.

The Test Method requires that a total of 400 non-empty points be counted over at least eight different preparations of representative subsamples. The reported values should therefore be accepted as estimated quantities, although the qualitative presence of asbestos is confirmed.

#### 5) Quality Assurance/Quality Control

Twenty percent of the sample results were confirmed by a second analyst, and two duplicate analyses were performed.

The laboratory has participated in the EPA Round Robin Asbestos QA/QC program since Round 1 with scores of 100%.

Data Use

The usefulness of the data is based on the criteria outlined in the EPA "Interim Method for the Determination of Asbestos in Bulk Insulation Samples " (EPA 600/M4-82-020, December 1982).

Upon consideration of the data qualifications noted above, the data are ACCEPTABLE for use.

Additional data packages associated with this project are expected from CLP or EPA laboratories.

ASB/880207 (for WP use only)



# Asbestos Analysis Data Sheet

Laboratory: Clayton Environmental

Case No.: SAS 3591J

Sample Matrix: Soil

Contract No.: All SAS

Data Release

Author. By: Krist Miller

Date Sample Received 2/11/88

## TABLE OF RESULTS OF POLARIZED LIGHT MICROSCOPY (PLM) ANALYSIS

Sample Number	Date Analyzed	Sample Description	Estimated % Asbestos (by type)	Non-Asbestos fibers
88074480	2/16/88	brown mineral mixture	No asbestos detected	cellulose mineral wool
88074481	2/16/88	"	No asbestos detected	cellulose
88074482	2/16/88	"	No asbestos detected	cellulose
88074483	2/16/88	"	No asbestos detected	cellulose
88074484	2/16/88	"	No asbestos detected	cellulose
88074485	2/16/88	"	No asbestos detected	cellulose
88074486	2/16/88	"	No asbestos detected	cellulose mineral wool
88074830	2/16/88	"	No asbestos detected	cellulose synthetic fibers
88074488	2/16/88	"	<1% chrysotile	cellulose
88074489	2/16/88	"	No asbestos detected	cellulose
88074490	2/16/88	"	No asbestos detected	cellulose
88074491	2/16/88	"	No asbestos detected	cellulose mineral wool
88074492	2/16/88	"	~2% chrysotile	~12% cellulose
88074493	2/16/88	"	~2% chrysotile	~8% cellulose
88074494	2/16/88	"	No asbestos detected	cellulose
88074495	2/16/88	"	No asbestos detected	cellulose
88074496	2/16/88	"	No asbestos detected	cellulose
88074497	2/16/88	"	No asbestos detected	cellulose trace mineral wool
88074498	2/16/88	"	No asbestos detected	cellulose mineral wool
88074499	2/16/88	"	No asbestos detected	cellulose mineral wool
88074500	2/16/88	"	No asbestos detected	cellulose trace mineral wool

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03-21-88

SAS 3591J - 10-014-01

# Asbestos Analysis Data Sheet

Laboratory: Clayton Environmental

Case No.: SAS 3591J

Sample Matrix: Soil

Contract No.: All SAS

Data Release

Author. By: K. Miller

Date Sample Received 2/11/88

## TABLE OF RESULTS OF POLARIZED LIGHT MICROSCOPY (PLM) ANALYSIS

<u>Sample Number</u>	<u>Date Analyzed</u>	<u>Sample Description</u>	<u>Estimated % Asbestos (by type)</u>	<u>Non-Asbestos fibers</u>
88074501	2/16/88	brown mineral mixture	No asbestos detected	cellulose
88074502	2/16/88	"	No asbestos detected	cellulose
88074503	2/16/88	"	No asbestos detected	cellulose mineral wool
88074504	2/16/88	"	No asbestos detected	cellulose trace mineral wool
88074800	2/16/88	"	No asbestos detected	trace mineral wool
88074801	2/16/88	"	No asbestos detected	cellulose mineral wool
88074802	2/16/88	"	No asbestos detected	cellulose

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SAS 3591J - 10-014-02



# Asbestos Analysis Data Sheet

Laboratory: Clayton Environmental

Case No.: SAS 3591J

Sample Matrix: Soil

Contract No.: All SAS

Data Release

Author. By: Kim Miller

Date Sample Received 2/15/88

## TABLE OF RESULTS OF POLARIZED LIGHT MICROSCOPY (PLM) ANALYSIS

Sample Number	Date Analyzed	Sample Description	Estimated % Asbestos (by type)	Non-Asbestos fibers
88074803	2/18/88	brown mineral mixture	No asbestos detected	cellulose
88074804	2/18/88	"	No asbestos detected	mineral wool
88074805	2/18/88	"	No asbestos detected	cellulose
88074806	2/18/88	"	No asbestos detected	mineral wool
88074807	2/18/88	"	No asbestos detected	cellulose
88074808	2/18/88	"	No asbestos detected	mineral wool
88074809	2/18/88	"	No asbestos detected	cellulose
88074810	2/18/88	"	No asbestos detected	mineral wool
88074811	2/18/88	"	No asbestos detected	cellulose
88074812	2/18/88	"	No asbestos detected	mineral wool
88074813	2/18/88	"	No asbestos detected	cellulose

~5% chrysotile  
~20% cellulose  
~3% mineral wool

for 03-24-88

SAS 3591J - 10-014-0

# Asbestos Analysis Data Sheet

Laboratory: Clayton Environmental

Case No.: SAS 3591J

Sample Matrix: Soil

Contract No.: All SAS

Data Release

Author. By: Kim M. Lule

Date Sample Received 2/15/88

## TABLE OF RESULTS OF POLARIZED LIGHT MICROSCOPY (PLM) ANALYSIS

Sample Number	Date Analyzed	Sample Description	Estimated % Asbestos (by type)	Non-Asbestos fibers
88074814	2/18/88	brown mineral mixture	No asbestos detected	cellulose mineral wool
88074815	2/18/88	"	No asbestos detected	cellulose mineral wool
88074816	2/18/88	"	No asbestos detected	cellulose trace mineral wool
88074817	2/18/88	"	No asbestos detected	trace cellulose
88074818	2/18/88	"	No asbestos detected	cellulose mineral wool
88074819	2/18/88	"	No asbestos detected	cellulose mineral wool
88074820	2/18/88	"	No asbestos detected	cellulose trace mineral wool
88074821	2/18/88	"	No asbestos detected	cellulose trace mineral wool
88074822	2/18/88	"	No asbestos detected	cellulose trace mineral wool
88074823	2/18/88	"	No asbestos detected	cellulose
88074824	2/18/88	"	No asbestos detected	cellulose trace mineral wool
88074828	2/18/88	"	No asbestos detected	cellulose trace mineral wool
88074829	2/18/88	"	No asbestos detected	mineral wool

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SAS 3591J - 10-014-04



# Asbestos Analysis Data Sheet

Laboratory: Clayton Environmental

Case No.: SAS 3591J

Sample Matrix: Soil

Contract No.: All SAS

Data Release  
Author. By: Kim Miller

Date Sample Received 2/15/88

## TABLE OF RESULTS OF POLARIZED LIGHT MICROSCOPY (PLM) ANALYSIS

Sample Number	Date Analyzed	Sample Description	Estimated % Asbestos (by type)	Non-Asbestos fibers
88074835	2/18/88	brown mineral mixture	No asbestos detected	trace cellulose mineral wool
88074836	2/18/88	"	No asbestos detected	mineral wool
88074837	2/18/88	"	~6% chrysotile	<1% cellulose trace mineral wool
88074838	2/18/88	"	No asbestos detected	cellulose mineral wool
88074839	2/18/88	"	No asbestos detected	cellulose mineral wool
88074840	2/18/88	"	No asbestos detected	cellulose mineral wool
88074841	2/18/88	"	No asbestos detected	cellulose
88074842	2/18/88	"	No asbestos detected	cellulose mineral wool
88074487	2/18/88	"	No asbestos detected	cellulose

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